

IN THE CLAIMS

The following is a complete list of the claims now pending.

Claims 1-17 (canceled)

Claim 18 (currently amended): A method of decoding a sequential stream of data for providing substantially random access to portions of an image at a plurality of predetermined resolutions, ~~said the~~ stream including a non-redundant multiple resolution frequency domain representation of the image, ~~said the~~ representation comprising one low frequency subband and a plurality of high frequency subbands arranged in levels, wherein each subband is divided into a plurality of tiles and each level represents frequency contributions between adjacent resolutions of the image, and wherein each tile represents a frequency contribution to a portion of the image at a predetermined resolution, said method including:

retrieving at most one pointer in ~~said the~~ sequential stream for each set of tiles which correspond to substantially a same spatial portion of the image for each level to access a portion of the digital image.

Claim 19 (currently amended): The method as claimed in claim 18, wherein accessing the ~~assessing said~~ portion includes decoding a data address by ~~said the~~ pointer.

Claim 20 (currently amended): The method as claimed in claim 18, wherein ~~said the~~ sequential stream is a ~~bit stream~~ bitstream.

Claims 21-37 (canceled)

Claim 38 (currently amended): An apparatus for decoding a sequential stream of data for providing substantially random access to portions of an image at a plurality of predetermined resolutions, ~~said the~~ stream including a non-redundant multiple resolution frequency domain representation of the image, ~~said the~~ representation comprising one low frequency subband and a plurality of high frequency subbands arranged in levels, wherein each subband is divided into a plurality of tiles and each level represents frequency contributions between adjacent resolutions of the image, and wherein each tile represents a frequency contribution to a portion of the image at a predetermined resolution, said apparatus including:

means for retrieving at most one pointer in ~~said the~~ sequential stream for each set of tiles which correspond to substantially a same spatial portion of the image for each level to access a portion of the digital image.

Claim 39 (currently amended): The apparatus as claimed in claim 38, wherein accessing the ~~assessing said~~ portion includes decoding a data address by ~~said the~~ pointer.

Claim 40 (currently amended): The apparatus as claimed in claim 38, wherein ~~said the~~ sequential stream is a ~~bit stream~~ bitstream.

Claims 41-57 (canceled)

Claim 58 (currently amended): A computer program product comprising a computer readable medium having recorded thereon a computer program for decoding a sequential stream of data for providing substantially random access to portions of an image at a plurality of predetermined resolutions, ~~said~~ the stream including a non-redundant multiple resolution frequency domain representation of the image, ~~said~~ the representation comprising one low frequency subband and a plurality of high frequency subbands arranged in levels, wherein each subband is divided into a plurality of tiles and each level represents frequency contributions between adjacent resolutions of the image, and wherein each tile represents a frequency contribution to a portion of the image at a predetermined resolution, said computer program product including:

~~means~~ code for a retrieval step, of retrieving at most one pointer in ~~said~~ the sequential stream for each set of tiles which correspond to substantially a same spatial portion of the image for each level to access a portion of the digital image.

Claim 59 (currently amended): The computer program product claimed in claim 58, wherein accessing the ~~assessing~~ ~~said~~ portion includes decoding a data address by ~~said~~ the pointer.

Claim 60 (currently amended): The computer program product as claimed in claim 58, wherein ~~said~~ the sequential stream is a ~~bit-stream~~ bitstream.

Claims 61-87 (canceled)

Claim 88 (new): A method of decoding a bitstream, said bitstream comprising a non-redundant hierarchical code, having one low frequency subband and a plurality of high frequency subbands arranged in levels, which levels combine to represent multiple resolutions of the image, and each subband is divided into a plurality of tiles which are entropy encoded, said method comprising the steps of:

retrieving from the bitstream those entropy encoded tiles representing substantially the same predetermined spatial portion of the image from a number of contiguous levels of entropy encoded tiles representing a predetermined resolution of the multiple resolutions of the digital image, wherein at least two entropy coded tiles from different the subbands which represent substantially the same predetermined spatial portion of the image are arranged contiguously in the bitstream;

entropy decoding each tile;

grouping the tiles into a plurality of subbands; and

inverse linear transforming the grouped subbands to produce the predetermined portion of the digital image at the predetermined resolution.

Claim 89 (new): An apparatus for decoding a bitstream, the bitstream comprising a non-redundant hierarchical code, having one low frequency subband and a plurality of high frequency subbands arranged in levels, which levels combine to represent multiple resolutions of the image, and each subband is divided into a plurality of tiles which are entropy encoded, said apparatus comprising:

means for retrieving from the bitstream those entropy encoded tiles representing substantially the same predetermined portion of the image from a number of

contiguous levels of entropy encoded tiles representing a predetermined resolution of the multiple resolutions of the digital image, wherein at least two entropy coded tiles from different subbands which represent substantially the same predetermined spatial portion of the image are arranged contiguously in the bitstream;

means for entropy decoding each tile;

means for grouping the tiles into a plurality of subbands; and

means for inverse linear transforming the grouped subbands to produce the predetermined portion of the digital image at the predetermined resolution.

Claim 90 (new): A computer readable medium comprising a computer program for decoding a bitstream, the bitstream comprising a non-redundant hierarchical code, having one low frequency subband and a plurality of high frequency subbands arranged in levels, which levels combine to represent multiple resolutions of the image, and each subband is divided into a plurality of tiles which are entropy encoded, said computer program comprising:

code for a retrieval step, of retrieving from the bitstream those entropy encoded tiles representing substantially the same predetermined portion of the image from a number of contiguous levels of entropy encoded tiles representing a predetermined resolution of the multiple resolutions of the digital image, wherein at least two entropy coded tiles from different subbands which represent substantially the same predetermined spatial portion of the image are arranged contiguously in the bitstream;

code for an entropy decoding step, of entropy decoding each tile;

code for a grouping step, of grouping the tiles into a plurality of subbands; and

code for a transforming step, of inverse linear transforming the grouped subbands to produce the predetermined portion of the digital image at the predetermined resolution.